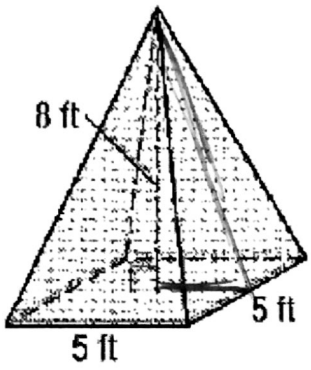
Mrs. Hayden

Name Key Date_____

201 Pyramids and Cones worksheet

LA = ½ p *l* **SA = LA + B** **V = 1/3 B h**



1. l = 8.4 ft $8^2+2.5^2=l^2$

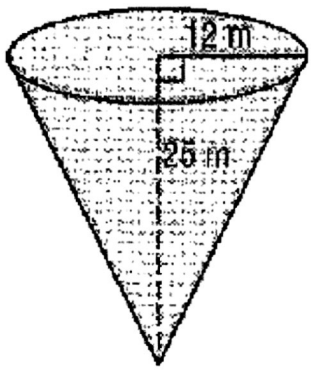
p = 20 ft

B= 25 ft²

LA = 84 ft² ½ 20 · 8.4

SA= 109 ft²

V= 66 ⅔ ft³ ⅓ 25 · 8



2. l = 27.7 m $12^2+25^2=l^2$ 27.7

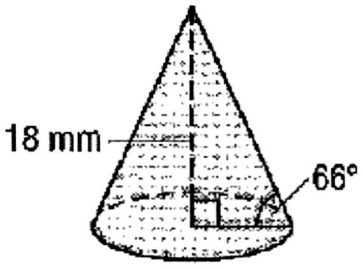
p = 24π m

B= 144π m²

LA = 1045.4 m² ½ 24π · 27.7

SA= 1497.8 m² 1045.4 + (144π)

V= 1200π m³ ⅓ 144π · 25



$\tan 66 = \frac{18}{r}$

$8.0 \approx r$

3.

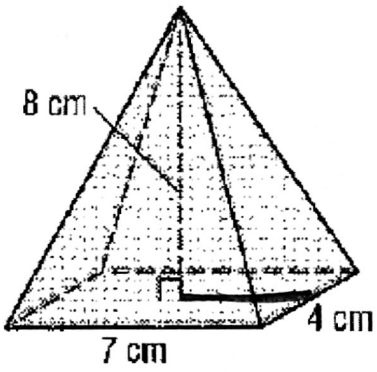
r = 8.0 mm

B= 201.8 mm²

V= 1210.6 mm²

⅓ 201.8 · 18

(I used stored answers)

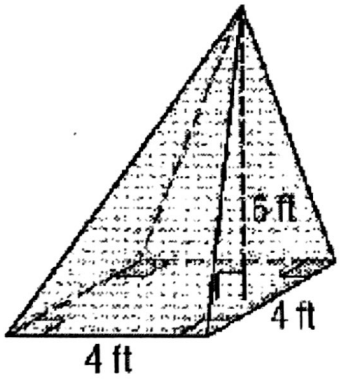


4. ~~V=~~

B= 28 cm²

V= 74 ⅔ cm³

⅓ 28 · 8

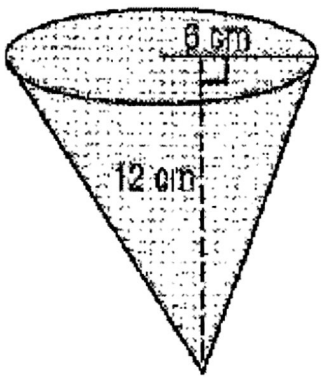


5. *Find the volume of the oblique pyramid.*

B= 16 ft²

V= 32 ft³

⅓ · 16 · 6



6. *Find the volume of the oblique cone.*

B= 36π cm²

V= 144π cm³

⅓ 36π · 12

The following pictures are regular triangular pyramids.
Remember to redraw the base!

7.

BM = 3

OM = $\sqrt{3}$

OC = $2\sqrt{3}$

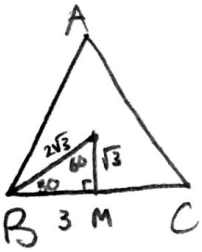
OA= $2\sqrt{3}$

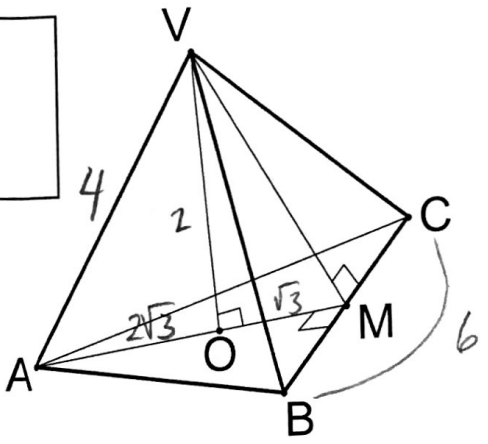
AM = $3\sqrt{3}$ $\sqrt{3}+2\sqrt{3}$

h = 2 $4^2 = (2\sqrt{3})^2 + h^2$

l = $\sqrt{7}$ $2^2 + \sqrt{3}^2 = l^2$

Given:
BC = 6
VA = 4





8.

OM = 3

OA = 6

BM = $3\sqrt{3}$

BC= $6\sqrt{3}$

p = $18\sqrt{3}$ $3 \cdot 6\sqrt{3}$

B = $27\sqrt{3}$ $\frac{(6\sqrt{3})^2\sqrt{3}}{4}$

LA = $45\sqrt{3}$ $\frac{1}{2} 18\sqrt{3} \cdot 5$

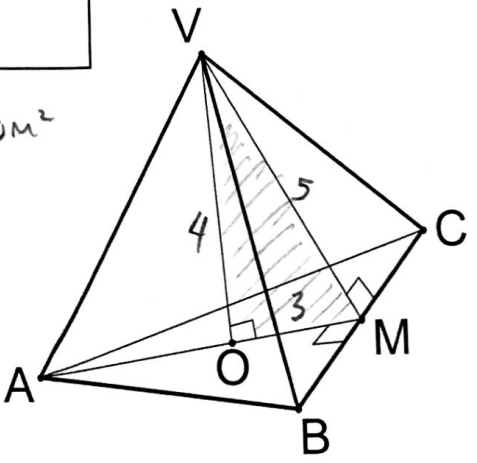
SA = $72\sqrt{3}$

V = $36\sqrt{3}$ $\frac{1}{3} 27\sqrt{3} \cdot 4$

Given:
h = 4
l = 5

$5^2 = 4^2 + OM^2$

$3 = OM$



$B = \frac{(4\sqrt{3})^2\sqrt{3}}{4}$

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$5^2 = 3^2 + AO^2$

9.

OA = 4 p = $12\sqrt{3}$

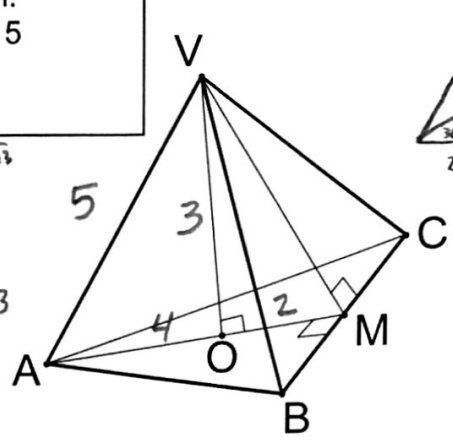
OM = 2 B = $12\sqrt{3}$

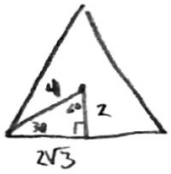
l = $\sqrt{13}$ $3^2+2^2=l^2$ LA = $6\sqrt{39} \approx 37.5$ $\frac{1}{2}12\sqrt{3}\cdot\sqrt{13}$

MC = $2\sqrt{3}$ SA = 58.3

BC = $4\sqrt{3}$ V = $12\sqrt{3}$ u^3 $\frac{1}{3}12\sqrt{3}\cdot 3$

Given:
VA = 5
h = 3





10.

VC = 10 p = 36 u

BC = 12 B = $36\sqrt{3}$ $\frac{12\sqrt{3}}{4}$

MC = 6 LA = 144 $\frac{1}{2}36\cdot 8$

$\triangle VMC$ $10^2 = 6^2 + l^2$

l = 8 SA = 206.4

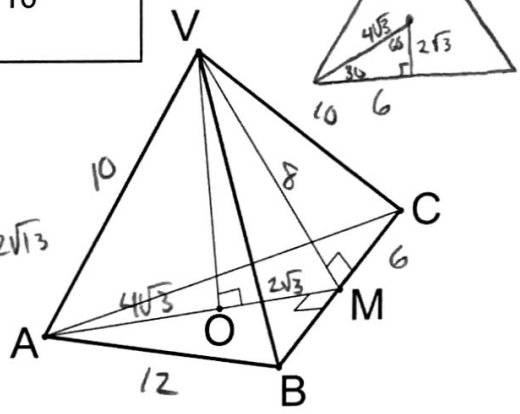
OM = $2\sqrt{3}$ V = 149.9 $\frac{1}{3}36\sqrt{3}\cdot 2\sqrt{13}$

$8^2 = (2\sqrt{3})^2 + VO^2$

$\sqrt{52} = VO$ →

h = $2\sqrt{13}$

Given:
AB = 12
VA = 10



11.

BM = 3

OM = $\sqrt{3}$

OA = $2\sqrt{3}$

VA= 6

h = $2\sqrt{6}$ $6^2 = (2\sqrt{3})^2 + h^2$

B = $9\sqrt{3}$ $\frac{6^2\sqrt{3}}{4} = B$

SA = $36\sqrt{3}$ → $4 \times B$

V = $18\sqrt{2}$

$\frac{1}{3}9\sqrt{3}\cdot 2\sqrt{6}$

$6\sqrt{18}$

$18\sqrt{2}$

Given:
All edges are 6